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163. This single-technician approach should not pose any legitimate concern about network security. ILECs routinely retain third-party vendors to do work on their MDFs as well as on other equipment in their central offices, including work in connection with physical and virtual collocation. Indeed, ILECs require CLECs to use these ILEC-approved vendors in engineering and installing equipment in connection with their collocated space -- work that includes installing new connector blocks on the MDF and connecting those blocks, using tie-cables, to the CLEC's frame in the collocated space.⁵¹ Thus, although BellSouth contends that "BellSouth does not currently allow vendors . . . unescorted physical access to its central offices," Varner Aff. ¶ 76, that claim is belied by the engineering and installation that vendors currently perform for collocation. Because these vendors would be retained by the ILEC as well as by the CLEC, the vendors could reasonably be expected to complete their task faithfully and accurately according to the jointly agreed M&Ps.

164. Indeed, if there were an objection to this approach, it is likely to be that the mere task of disconnecting and then reconnecting a single wire seems somehow insufficient to accomplish the grand task of recombining network elements. But if this were a valid objection, it would be equally applicable to the collocation approach that BellSouth and all other RBOCs have argued is sufficient to establish recombination. In each case, the

⁵¹ See Master Collocation Agreement, § 4.4 (requirement of third party vendor). A list of vendors approved by BellSouth to perform these functions on behalf of CLECs is contained at page 22 of BellSouth's Collocation Handbook, appended to the Tipton Affidavit, PAT Exh. 2.

essence of the exercise is simply to disconnect the loop from the switch and then reconnect it. More fundamentally, such an objection reduces to the claim that this approach is not sufficiently costly or disruptive. But that is not an objection; it is a virtue.

165. The only rationale -- apart from anticompetitive spite -- that the RBOCs have advanced for forcing a CLEC to perform the disconnect/reconnect operation in a little room in some remote corner of the central office, as opposed to at the MDF, is "network security." Because the ILECs can directly address that concern using the exact same procedures (certified third-party vendors) that they use today in the context of accommodating not only collocation but growth in its own customer base, there is no good reason not to consider direct separation and recombination at the MDF as an alternative to collocation.

2. Texas PUC Approach: Virtual Collocation of Cross-Connections

166. Another relatively simple method that the Texas Public Utility Commission recently required SBC to implement involves the "virtual collocation" solely of CLEC cross-connects. See Texas PUC 271 Order, at 4 (Attachment 39). As the Texas PUC explained, under this proposal, CLECs would "provide . . . ILECs with rolls of their own wire. When a customer changes carriers from the ILEC to a CLEC, the ILEC would take out a wire from the CLEC's inventory, untie and remove the ILEC's wire, and insert and tie the CLEC's wire. Similarly, if customer returns to the ILEC, the ILEC must remove

the CLEC's wire, insert its wire, and return the CLEC's wire to the CLEC's inventory." Id.⁵²

The ILEC's charge for this virtual collocation of cross-connects must be "cost-based." Id.

167. Like any approach involving manual work at the MDF, the virtual collocation of cross-connects proposal has disadvantages: First, CLECs' entry will be gated unless sufficient ILEC technicians are available to remove the ILEC's cross-connect and install the CLEC's wire. Second, the customer would still be placed out of service for the period in which the ILEC works. Finally, this proposal does not address how to serve IDLC customers.

168. Nevertheless, compared to BellSouth's version of collocation, this virtual collocation of cross-connects is a much simpler process that can be implemented quickly. Although labeled as a collocation proposal, virtual cross-connects would avoid the need to establish -- and thereby waste -- significant collocation space. It would likewise avoid the use of all the equipment (tie cables, mini-MDF's, etc.) that BellSouth's collocation requirement would impose. Moreover, it eliminates the multiple points of failure involved in BellSouth's collocation proposals. Again, like the third party vendor approach, the principal attack on this method would be that virtual collocation of only cross-connects is not sufficient to separate and recombine network elements. Again, however, that supposed disadvantage is actually a substantial benefit of this method.

⁵² Although the Texas PUC suggests that the ILEC return the wire to inventory to be re-used, the better solution would simply be to discard the wire and use new wire for each installation.

B. Electronic (Logical) Recombination Via Recent Change

169. Recombining elements by manually disconnecting and reconnecting wires is not the only method of separating and recombining the loop and switching elements. One immediately promising method involves use of switch intelligence and the "recent change" process.

1. Allowing CLECs To Use BellSouth's Recent Change Process To Recombine Unbundled Elements Is Technically Feasible, Will Provide CLECs With Near-Parity And Will Promote Competition.

170. As described above, BellSouth's collocation requirement will add extended customer outages, service degradation, unnecessary cost, and significant delay to CLEC efforts to compete for BellSouth's customers using combinations of UNEs. In contrast, permitting CLECs to have access to BellSouth's software-based recent change administration processes will eliminate many (although not all) of the competitive hindrances inherent in BellSouth's proposals. Use of recent change will permit CLECs to compete at near-parity with BellSouth for customers' local exchange business. Moreover, it is technically feasible and available at reasonable cost.

171. "Recent change" is an industry term used to describe the capability of a switch that allows a LEC to update the office specific software of its switch. ILECs use the recent change capability, among other things, to establish the electronic connections that combine the functionality of the loop and the functionality of the switch, so that a customer can receive or terminate telephone service.

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172. AT&T began investigating the use of software-based tools as a means to allow CLECs to combine UNEs after ILECs, including BellSouth, insisted that they would stand on their legal right under the 8th Circuit's decision not to provide selected network elements in a combined manner. Prior to that time, of course, there was no need to investigate such processes, because the FCC's rules and AT&T's interconnection agreements with most ILECs (including BellSouth) provided that the ILEC would offer element combinations, up to and including the so-called UNE platform.

173. AT&T's investigation revealed that there are software-based tools that ILECs, including BellSouth, and their customers use today that provide a more reasonable, nondiscriminatory and pro-competitive method to combine the functionality of the unbundled loop and switching elements than collocation. Recent change is a software-based tool that BellSouth uses today to "uncombine" loops and switching. When BellSouth uses these software-based tools, they just as effectively disconnect the loops and the switching elements as when BellSouth technicians use hand tools to rip apart wires on an MDF.

174. If CLECs are permitted to have appropriate access to the same BellSouth software-based tools, they will also be able to recombine network elements as efficiently as BellSouth. Moreover, they will be able to do so in virtually unlimited quantities, just as BellSouth now implements customer requests to change long distance carriers.

175. The latter capability is particularly important in an environment where BellSouth can provide both local and long distance services to customers as a bundled package. BellSouth will be able to use its recent change software tools to convert thousands

of customers to its long distance services almost immediately. If CLECs do not have the same ability to convert similar numbers of BellSouth local customers to their own local service just as quickly, they will be severely handicapped. Therefore, the nondiscrimination principles of Section 251 require that new entrants must be allowed to have access to the software-based tools for combining UNEs that BellSouth and its business customers use today.

2. Operation Of The Recent Change Software

176. In order to describe how the recent change software works, it is important to understand the two different kinds of software systems that ILECs employ in their local and tandem switches. "Generic" software is provided by the switch vendor and used to perform functions that instruct the switch how to process and record calls. Such software is developed and maintained directly by the switch vendors, not the LEC. Updates to the generic software come from the vendor at infrequent intervals, generally no more than once a year.

177. In contrast, "office specific" software permits identical switches from a single vendor to differ from each other. The switch vendor initially supplies this software, but the software is designed so that it can be maintained and updated by the LEC itself. Office specific software enables the LEC to define switch specific items, such as what NXX codes the switch serves, where traffic originating or terminating at the switch should be routed, and the feature capabilities, telephone number and blocking that is assigned to each customer line. Most important for these purposes, this software also allows the LEC to

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initiate or discontinue service on specific customer lines. On a typical business day, a LEC makes large numbers (hundreds or even thousands) of recent change updates to its office specific software for each switch.

178. The recent change process is generally triggered off of an ILEC's ordering and provisioning systems. For example, when a BellSouth customer service agent takes an order and enters it into BellSouth's ordering systems, the customer specific data flows from the ordering systems, through BellSouth's provisioning systems and updates the switch software on the due date of the order.

179. For example, if a BellSouth customer wants to add a new feature such as call waiting, the BellSouth service agent takes the order, establishes an installation date with the customer (often that day), and sends the order into the BellSouth ordering systems. At the designated time, the BellSouth provisioning systems send a recent change message to the switch that enables the customer's line to use the newly ordered feature.

180. The recent change process is also used to make other changes to a customer's line, such as the change of a primary intraLATA toll carrier or interexchange carrier. This activity alone accounts for tens of millions of recent changes implemented by ILECs annually. All of those changes are provisioned through BellSouth's recent change systems. None requires any physical work inside or outside of a BellSouth central office.

181. Another example of BellSouth's use of the recent change capability -- and the one most pertinent to the current analysis -- is when existing BellSouth customers request to have service discontinued because, for example, they are moving. Upon receiving

a disconnection request from the customer, the BellSouth customer service agent enters keystrokes that generate an order in the BellSouth ordering systems. The BellSouth ordering systems then trigger the BellSouth provisioning systems to send a recent change message to the switch on the date the customer requests. When the recent change is implemented, the BellSouth switch electronically disconnects the loop from the functionality of the switch. This entire process is automated. Once the agent enters the customer's service request, the information automatically flows through the BellSouth systems, and no manual work is necessary to disconnect the customer's service. In particular, BellSouth does not send technicians to the customer's premises or to the MDF to move or remove any wires.

182. Similarly, when a new customer moves into the location vacated by the first customer, BellSouth uses the recent change process to reconnect the functionality of the loop and switch. Again, the agent takes an order from the customer and enters keystrokes into a terminal. The service request then passes through the BellSouth ordering systems, which send a message to the BellSouth provisioning systems to send an appropriate recent change message to the switch at the requested service start date. At that time, the BellSouth provisioning systems direct the switch to reconnect the loop and switch, thus provisioning the customer's service. As with the disconnect order, this process is fully automated, and no BellSouth service technician has to touch any wires anywhere in its network.

183. A Bell Atlantic witness in recent testimony in Massachusetts provided a description of the way this process works. In particular, he acknowledged that:

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(1) for customers who wish to terminate service, Bell Atlantic typically issues and provisions a service disconnection order using purely electronic means,⁵³ because Bell Atlantic's "goal is to maintain dedicated outside and inside plant,"⁵⁴ and

(2) when a new customer moves into a location after a disconnect order has been implemented and orders basic service, no human being has to do anything to complete the provisioning of the service request after the initial Bell Atlantic data entry person, i.e. the service representative, types the order into his or her computer.⁵⁵

184. Once BellSouth implements a recent change to terminate service at the time its customer requests, the line is functionally useless and cannot be used to make calls to, or receive calls from, other end users. This is also confirmed by recent testimony from another Bell Atlantic witness in Massachusetts, who acknowledged that the recent change process enables Bell Atlantic to "disable and change" all switch functionalities from a particular line.⁵⁶

185. When an ILEC disconnects a loop from the switch using the recent change process, these two elements no longer function in combination with each other. The

⁵³ Testimony of Thomas M. Aulisio, In re Bell Atlantic - Arbitrations, DPU 96-73/74, et al., at 28-29 (Dec. 4, 1997) (excerpts included as Attachment 45).

⁵⁴ Id. at 69.

⁵⁵ Id. at 32-33.

⁵⁶ Testimony of Don Albert, In re Bell Atlantic - Arbitrations, DPU 96-73/74, et al., at 172 (May 1, 1998) (excerpt included as Attachment 25).

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recent change prevents the switch from recognizing an off-hook condition on that loop.

Thus, the switch does not provide dial tone on the line⁵⁷ and blocks all of the call processing capabilities of the switch from being accessed by the line. Thus, for example, it does not recognize any digits or pulses dialed from equipment connected to the line. In addition, the recent change prevents the switch from terminating any calls to that line.

186. As a result, the use of recent change can achieve exactly the same result as if a BellSouth technician had removed wires on the customer's loop from the MDF, breaking the physical link between the loop and the switch. As SBC's witness recently testified in Texas, after an ILEC has disconnected a loop from the switch using recent change, when callers take the phone off the hook "[t]hey get nothing."⁵⁸

187. Some ILECs have indicated that they do not always use recent change in these circumstances, in order to keep facilities in use where they are needed. This is a sound engineering practice in those few central offices with limited spare capacity relative to demand. In these offices, rather than have the vacated switch port remain idle waiting for a

⁵⁷ See also *id.* at 175.

⁵⁸ Transcripts of Hearings, April 22, 1998, Public Utility Commission of Texas, Case No. 16251, pp. 809-810. If a State, as a matter of public safety, requires the LEC to retain so-called "warm" dialtone in such cases, a caller could place a call to 911 or to the ILEC's business office, but could not make or receive ordinary calls. However, switches can be programmed to deny all calls to and from a phone after a customer's disconnect order has been implemented. ILECs should not be heard to argue that the use of "soft" dialtone must be required and thus defeat the claim that a loop and port are unbundled. Even soft dialtone implements an effective unbundling for every essential competitive purpose, and all of BellSouth's alternative proposals require that the loop be completely out of service during the cutover process.

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new customer to arrive, it is immediately reused to provide service to a customer who may have been on a "held order" because of a lack of spare facilities in the central office.

However, this circumstance has no relevance at all in cases where a CLEC wants to obtain a combination of elements from the ILEC, because the ILEC's facilities will be immediately used by the CLEC to provide its own service.

188. Incumbent LECs also use the recent change process to combine other elements. For example, if an incumbent LEC decides to relieve an over-burdened tandem switch that routes traffic between end office switch A and end office switch B, physically installing new direct transport between those switches is not sufficient to accomplish the task. To effect a functioning connection between the new transport facilities and these switches, each switch's recent change memory must be reprogrammed to connect -- and thereby route traffic -- over the new transport elements.

3. Why ILECs Use Recent Change

189. BellSouth and other ILECs use recent change because it is the most efficient use of their resources. As noted above, the ILEC's concern is to make as few manual (i.e., physical) changes to its network as possible. Manual processes take longer to perform, cost more money to implement, and are susceptible to higher error rates than processes that are implemented through software-based tools. See Amos Joel Aff. ¶¶ 22, 28-33, 36-60 (Attachment 1).

190. For example, as described above, BellSouth knows that shortly after it disconnects a customer's service, another customer is likely to move into the same location

and request service. Rather than physically removing the cross-connection wires on the frame to terminate service and then reinstalling wires to establish service for the new customer, it avoids these wasteful tasks by using the recent change process. In such cases, the physical connection of the loop and the port remains intact, and the disconnection and reconnection of elements (and service) is done exclusively through the use of software. This is exactly analogous to the circumstance in which CLECs would use the recent change process to combine unbundled loops and switching.

4. Application Of The Recent Change Process To Enable CLECs To Combine Unbundled Network Elements

191. At a high level, CLECs could use the recent change process to combine unbundled network elements as follows:

- 1) The CLEC receives a service request from a customer wishing to change carriers.
- 2) The CLEC agent issues a service order to BellSouth for the network elements needed (e.g., loop and switching) to provide service to this customer.
- 3) As part of the processing of the CLEC order, if BellSouth insists on tearing apart the existing loop and switch combination, BellSouth prepares a "disconnect" order that will electronically uncombine the loop and switch port serving the customer at the appointed date.
- 4) After the CLEC receives a firm order confirmation from BellSouth, the CLEC provisioning system initiates a recent change that will be held in the BellSouth

systems buffer and, at the appropriate date, will electronically reconnect the loop and switch elements.

5) On the due date of the order, BellSouth's systems issue the disconnect order on the customer's line, electronically disconnecting the loop from the switch, and making the customer's existing loop/switch combination useless until and unless the CLEC's reconnect command is processed.

6) The implementation of the disconnect command would be coordinated with the associated CLEC recent change request from the buffer -- assuming, of course, that the CLEC correctly issued a reconnect command. With such coordination, these activities could be completed within a matter of seconds and be performed automatically during off-peak hours, to minimize customer outage.

5. Recent Change Can Be Used Both For Existing And New Loops.

192. CLECs can use the recent change process to combine both existing and new loops with unbundled switching. When a CLEC wants to combine the functions of a new (i.e., not previously existing) ILEC loop and switching, it is important to note that at least two separate work activities are necessary before service can be provided on the new line. Clearly, some physical work must be done. Generally, this work occurs both outside the central office to connect a spare loop facility to the customer's premises, and within the central office to connect the loop to a spare switch port. However, the physical work by itself does not make the customer's line functional.

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193. A second, separate activity is just as essential to create the customer's new service: combining the functionality of the switch with the customer's new loop. This is accomplished by performing a recent change on the switch software to assign the line a telephone number, to implement any features or screening the customer requested, and to provide the customer dial tone for outgoing calls. Indeed, it is the implementation of the recent change process, rather than any mere physical connection, which gives the customer's line any functionality and truly establishes service for the customer. Without the latter, the customer's line is as useless as if the physical links were never installed.⁵⁹

6. Allowing CLECs To Access BellSouth's Recent Change Process Is Technically Feasible And Will Not Create Network Security Concerns.

a. Systems Used To Provide Recent Change Capabilities

194. BellSouth, like all of the other large ILECs, also allows its large business customers who purchase Centrex services to perform recent changes on its switches. Among other things, these customers are permitted to issue software-based instructions that can: disable a line, enable a line, add or remove features from a line, move a line within the customer's location and apply screening codes that prevent certain types of calls (e.g. 900, international) from being dialed.

⁵⁹ In fact, BellSouth's witness admits that "initial software modifications," which include "switch translations" that are performed using recent change capability "are necessary for the proper functioning of individual network elements or CLEC-combined BellSouth unbundled network elements" Varner Aff. ¶ 73 (emphasis added).

195. I understand that BellSouth uses two different OSS that permit Centrex customers to access the recent change process. COMMTECH Corporation manufactures one, called MACSTAR, and Bellcore manufactures the other, which is called CCRS. These systems have the capability to operate with all types of switches in BellSouth's network. The fact that this capability is available and used today by BellSouth's Centrex customers, clearly demonstrates that it is technically feasible to make this capability available to entities other than BellSouth, without any threat of network security or harm.

b. Permitting CLECs Access To BellSouth's Recent Change Process Will Not Create Network Security Concerns.

196. None of these capabilities raise any network security concerns. Centrex customers access the recent change capabilities of the switch through an OSS that serves as a "firewall" between the Centrex user and the ILEC systems that directly update the switch. As a result, individual Centrex customers can only access the switch to make authorized types of changes for lines that are assigned to them.

197. This works because the OSS firewall that the Centrex customers use is partitioned for each user. Within the partition, the OSS is populated with the contiguous block of codes (phone numbers) that have been assigned to the specific Centrex user. The OSS allows the Centrex user to perform specific types of recent changes only on the lines to which that customer subscribes. Thus, Centrex users cannot perform a recent change that would impact any other customer on the switch.

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198. In addition, the OSS firewall is also designed so that the Centrex customer may only use certain functions of the recent change capability. Thus, while the Centrex customer could use recent change to add or remove features to a line that it controls, it cannot use other functions of the recent change capability that BellSouth exclusively controls. For example, although BellSouth can use recent change capability to change virtually any aspect of the office specific software, such as the NXX codes served by the switch, a Centrex customer is prevented by the OSS firewall from accessing these more advanced recent change functions. Thus, there is actually a "dual" firewall OSS that both prevents Centrex customers from changing others' lines and from accessing functions that could interfere with the network.

199. Indeed, the OSS firewall is sufficiently secure to allow, in the typical scenario, multiple Centrex users served by a single switch to use recent change capability, even where the switch also serves POTS customers. Access to recent change capability is not limited to those large Centrex customers that require an entire switch be dedicated to their use.

200. Because a similar OSS firewall would be in place for CLECs using recent change, there is simply no factual basis for BellSouth's claims that CLECs "would be given full access to recent change capabilities" and that "in order for CLECs to utilize the recent change process, they would have to have direct access to BellSouth's switch translations." Milner Aff. ¶ 41. The OSS firewall would limit CLECs' access to their customers' lines and to limited functions to combine elements and provide their customers

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with other functionality. Moreover, CLECs would access the recent change capability not by "direct access" to the switch, but through a dedicated connection or similar arrangement through the OSS firewall -- the same arrangement that is in place for Centrex customers. These basic factual misstatements of the proposal simply reinforce my view that BellSouth has summarily rejected the proposed collocation alternatives without giving them a serious review. As the experience with Centrex customers demonstrates, there is no doubt that it is technically feasible to create a firewall system that allow access to BellSouth's recent change process without creating any risk to network security or reliability.

c. Development Of CLEC Access To Recent Change Is Both Practical And Feasible.

201. It is both practical and feasible to create a means for CLECs to access BellSouth's recent change process. As I described above, even after a loop is physically attached to a switch, the functionalities of the two elements are not combined until a recent change is performed. If CLECs are given nondiscriminatory access to the recent change process in the same way that BellSouth and its Centrex customers are, they can perform these recent changes themselves and combine an unbundled loop and unbundled switching so that service may be provided to end users.

202. Rather than use BellSouth's expensive, labor-intensive physical process to connect wires in each central office, the CLEC should be able to obtain comparable access to the same provisioning capabilities that BellSouth uses for itself. This is consistent with the FCC's recognition that access to ILEC OSSs "is vital to creating opportunities for

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meaningful competition.”⁶⁰ Moreover, it is directly responsive to the FCC’s requirement that ILECs “must provide nondiscriminatory access to their operations support systems functions for . . . provisioning . . . available to the LEC itself.”⁶¹

203. The provisioning systems referenced here are very different from the existing OSS systems that CLECs need to place service requests or to obtain information from BellSouth and that interface with BellSouth’s pre-ordering and ordering OSSs. Use of recent change requires that the CLEC obtain a separate provisioning capability that will interact directly with the firewall interface to BellSouth’s own recent change administration systems. Unlike any other OSS, access to this system will enable the CLEC to give direct commands that can be passed (via the BellSouth interface and provisioning system) into the switch.

204. The CLEC’s OSS interface will have to be properly programmed, again at the CLEC’s expense, to send the correct instructions to the ILEC interface. If the CLEC fails to do so, or if in any particular case a CLEC service representative forgets to issue the proper commands or issues incorrect ones, the CLEC customer will not receive service as requested. Moreover, in such cases, the responsibility for the problem will be with the CLEC, not BellSouth.

⁶⁰ Local Competition Order, ¶ 518.

⁶¹ Id., ¶ 523. See also id., ¶ 525 (nondiscriminatory access to such systems is necessary “to comply fully with section 251(c)(3)”).

205. Using this process, the CLEC would inform BellSouth, through its service order, that BellSouth should, if it chooses, initiate a disconnect recent change command for the customer involved, which will unbundle, via electronic means, the previously combined loop and switch functions. Assuming BellSouth intends to perform such unbundling, the CLEC would separately initiate a "reconnect" recent change provisioning command to recombine the loop and the switching elements. These two functions would be coordinated by having the CLEC's electronic reconnect activity held in a buffer until BellSouth's disconnect order is sent. At that time, the CLEC provisioning command would be associated with the BellSouth disconnect command, so that both can be processed with the minimum amount of customer disruption. In addition, to avoid customer impact, as well as any possibility of congestion in the switch, these commands could all be programmed to operate in the early morning hours.

206. The same process could be used to combine the functionality of the switch with the functionality of a new loop that has not previously been in service. As described above, even though a loop and port are physically connected, they are not combined in a functional sense until the switch software is updated through the use of a recent change message. In this situation, the ILEC would perform the work necessary to physically connect the loop and port. This would likely involve work that is performed outside the central office, such as making a connection at a feeder distribution interface, and cross-connect work performed within the central office. BellSouth would receive an appropriate cost-based non-recurring rate (to the extent it is not already being compensated

in existing rates), just as it is compensated for moving loops in a central office in order to send traffic to a collocation node.

207. After the physical work is completed, the CLEC can, on the service due date, direct the switch to perform the recent change to electronically combine the loop with the switch. In contrast to the case of a preexisting service, there is no need for BellSouth to send a disconnect order for the customer's new line, because the elements were not previously electronically combined to enable BellSouth to provide a service over that line.

208. The development work necessary to create a software tool that CLECs can use to combine loops and switching is relatively straightforward and should not be especially time consuming or costly. Although systems are not yet available to perform as described, from recent testimony and other information I have received from COMMTECH representatives, it appears that the necessary development could be completed, tested and deployable within six months, if BellSouth provides the necessary information and cooperation. Moreover, the costs of implementation would be very modest compared to the costs of collocation.

209. The OSS firewall needed for CLECs in the recent change context is similar to the one that is available today for Centrex customers. The main changes necessary are: (1) to limit CLECs' access to the specific line numbers of their customers, rather than the blocks of numbers assigned to Centrex customers and (2) to allow the system to

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coordinate the disconnect and reconnect recent changes sent by the ILEC and CLEC, respectively, to minimize the outage impact on the customer.

210. The first change can be made through the development of a database table that is updated via BellSouth's provisioning process and identifies each of the telephone numbers or lines for which a specific CLEC may send modifications through the BellSouth firewall interface into the recent change process of the switch. Table driven databases are a standard type of development project that require no special background in telephony. Moreover, because the CLEC's use of the recent change for a particular customer will not occur until after BellSouth sends its disconnect message, there will be sufficient time for BellSouth to populate the database with information regarding the identification code of the new carrier chosen by the customer.⁶²

211. Establishment of the coordination between BellSouth and CLEC provisioning commands requires only the establishment of a buffer that holds the CLEC's recent change until BellSouth sends its own message to the switch software. This is also a simple development project.

⁶² The firewall OSS would get a feed from BellSouth's provisioning system that would populate the OSS with the identifier of the lines being moved over to a specific CLEC based on a service order from the CLEC. This would allow the CLEC to have access only to its own customer's lines and not to the lines of the ILEC or of any other CLEC. This obviates any security concerns.

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212. The fees for this development are estimated to be no more than \$3 million per RBOC.⁶³ Thus, this cost would include not only Louisiana, but also all of the BellSouth states. Based on current input regarding system requirements, it appears that no other systems development will be required on any of the legacy BellSouth OSSs. The equipment platform for this system uses existing technology (HP 9000K series hardware), which would cost approximately \$250,000 per unit, and no more than two units (with one serving as a back-up) would be needed to serve the entire state. These costs are particularly modest when compared with the enormous expense of implementing the BellSouth collocation requirement.

7. Advantages and Disadvantages To Recent Change

213. Recent change is significantly better for CLECs and consumers than the collocation method required by BellSouth for the following reasons:

- (a) Recent change does not entail the substantial delay required to establish a collocation arrangement in each and every ILEC central office for the sole purpose of combining loops and ports;
- (b) Recent change preserves scarce and valuable collocation and frame space for facilities-based carriers;

⁶³ For these purposes an "RBOC" is defined as one of the original seven companies created at the time of the Bell System divestiture.

- (c) Recent change, if developed and implemented properly, substantially reduces the customer outage associated with collocation;⁶⁴
- (d) Recent change eliminates all of the manual processes and the associated human error inherent in BellSouth's proposals;
- (e) Recent change works for all types of loop technologies, including IDLC loops. This would eliminate the need to move a customer off of this state-of-the-art loop technology simply because the customer wants to change local service providers. It also eliminates all of the outage, cost and service degradation that occurs in moving a customer off of the IDLC system;
- (f) The automated nature of recent change does not have the same competition gating effect as the manual processes involved with collocation. Because the capacity of the recent change process is effectively limitless, it will allow for the robust competition envisioned by the Act;
- (g) Recent change is a more cost effective means to allow the CLECs to combine the elements;
- (h) Recent change is automated and forward-looking, while collocation is a step back in technology time for the CLECs;

⁶⁴ In fact, in comparing the process of porting numbers, which is performed via recent change, with loop cutovers for CLECs, one of BellSouth's witnesses concedes that the "loop cutover is much more complicated in terms of work steps (both on the BellSouth part of the network as well as the CLEC's part) than the number porting." Milner Aff. ¶ 74.

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- (i) Recent change does not add the additional points of failure on BellSouth's frames and the associated potential for service failure; and
- (j) In contrast to collocation, recent change does not require the CLEC to own or control any of its own network facilities simply to be able to use combinations of network elements.

214. While recent change is superior to collocation as a means for combining UNEs, it is not a panacea. It cannot be used, for example, to combine unbundled loops with unbundled transport.⁶⁵ It will require a dedicated, good faith collaboration between ILECs, CLECs, and vendors. It requires investment in and deployment of new equipment and new software. And it still imposes a service outage, however brief, on the customer. For all these reasons, recent change will not allow competition to develop as effectively or as quickly as it would if the ILECs did not insist upon separating their network elements before allowing CLECs to use them.

⁶⁵ However, as I discussed, other electronic means are available to combine these elements, thereby eliminating unnecessary collocation arrangements and all the disadvantages associated with it.

CONCLUSION

215. Carriers seeking access to combinations of an ILEC's network should not be required, as a precondition of gaining such access, to obtain collocated space from the ILEC. Such a requirement is inherently discriminatory to UNE-based CLECs and burdens them with extreme and unnecessary costs. It also precludes them from being able to combine the unbundled network elements without using their own facilities. Adoption of a collocation requirement for recombination is thus unwarranted.